STUDIES ON SYRPHIDÆ.—II. THE INVALIDITY OF SCÆVA (=CATABOMBA) AS A GENUS.

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(WITH PLATE II.)

Among the numerous and more or less unsuccessful efforts to break up the large genus *Syrphus,* is the attempt to remove those species in which the eyes of the males show an area of enlarged facets on the upper portion. The separation of species with this particular character, in correlation with certain others, has been made by three authors in various ways, and each has proposed a new generic name for the group thus removed. Certainly the best known of these names is that of "*Catabomba,*" proposed by Osten Sacken* to include *Syrphus pyrastri* Linné, on account of the enlarged facets, swollen frons and small hypopygium. The name was adopted by Williston (though in a recent letter he states that he always had an inclination to reunite the genus with *Syrphus*), and also by Verrall who maintains the validity of the genus.† A number of species have been designated as belonging to "*Catabomba.*" Earlier than this was the attempt of Rondani,‡ who gave the name "*Lasiophthicus* (*Lasiopticus*)" to include the species having hairy eyes, naming *S. pyrastri* as the type. This name is used by Aldrich in his Catalog of N. A. Diptera. Still earlier was the revision of the genus *Syrphus* by its author, Fabricius§, with the name "*Scæva*" and *S. pyrastri* designated as the type. This name, apparently, has priority over the others.

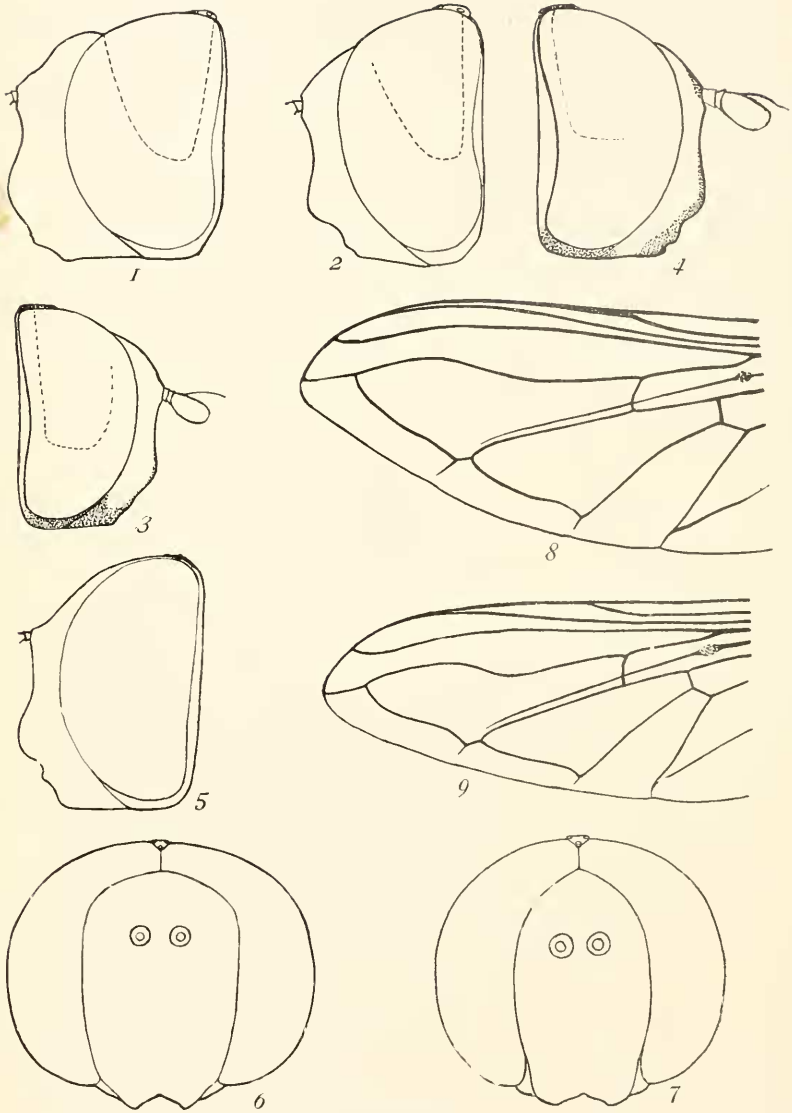
Incidentally, a considerable amount of discussion has arisen as to which of the above authors should have the credit for erecting the genus, and which name should stand. I am satisfied that all discussion of this matter is futile, however, for I have sufficient evidence to prove that such a separation is untenable. No one would consider

* Western Diptera, 1877, 326.

† Br. Flies, Syrphidæ, 333–4.

‡ Nuov. An. Nat. Sci., 1844, 459.

§ Syst. Antl., 1805, 248.



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the generic descriptions of "*Scæva*" or "*Lasiophthicus*" except as modified to include the characters outlined by Osten Sacken for "*Catabomba,*" viz.: (1) Enlarged eye-facets in the male; (2) swollen frons; (3) small hypopygium, to which may be added the following characters more or less correlated with these; (4) pilose eyes; (5) curved third vein.

The problem resolves itself into this: Are these characters sufficient for the separation of a genus? If they were constant no one would raise an objection, but right here lies the difficulty, for there is not one of them but exists to a greater or less degree in members of the genus *Syrphus*. In a word, "*Scæva*" is based on a specialized condition of certain characters which fade out in the various species of *Syrphus*. Let us examine these characters singly.

1. *Enlarged Facets.*—In all species of *Syrphus* which I have examined (or in all Syrphidæ for that matter), the facets of the upper central part of the eye, in both sexes, are larger than those around the border and upon the lower half of the eye. In most cases there is a regular intergradation in size, but in the males of certain species (*pyrastri* L., *albomaculatus* Macq., *scleniticus* Meig., *melanostoma* Macq.) there is a sharp line of separation marking off the area of enlarged facets from the smaller ones below, behind and before the area (Pl. II, Fig. 1). This line of demarkation is not always complete (Fig. 2), and Girschner has pointed out* that the amount of separation varies with different species, and has indicated his doubt of the validity of the genus because of this. In this observation Girschner is entirely correct, as I have determined by an examination of *pyrastri, albomaculatus* and *scleniticus,* and there is also more or less individual variation in *pyrastri* (my series is not large enough to determine this in the other species). The area is wanting in the females (Fig. 5); so is a secondary sexual character. Moreover, the demarkation of the facets may appear in other species which belong undoubtedly to the genus *Syrphus*. In *S. arcuatus* (Fallén), as I have discovered, this area is of sporadic occurrence, in a few males (Fig. 3), while in a related species, *S. perplexus* Osburn,† the line of demarkation is present to some degree in a majority of the males (Fig. 4), though some do not have it. I have

* Wien. ent. Zeit., III, 197.

† Studies on Syrphidæ, Pt. I, p. 55.

examined thirty males of *arcuatus,* and four of these show this condition. Of *perplexus* I have seen but fourteen males and all but four of these show more or less separation of the facets. Sometimes the line of separation extends nearly around the area (Fig. 3) as it does in *pyrastri,* but more commonly it fades out on the lower border of the area and is confined to the posterior and a part of the lower sides (Fig. 4). Evidently this character, since here it is not even of specific importance, cannot be urged as a generic character.

2. *Swollen Frons.*—This again is most marked in *pyrastri,* where especially in the male, it reaches its highest development (Figs. 1 and 6). In *albomaculatus* it is less marked, while in *scleniticus* (Figs. 2 and 7) it is not more evident than in certain species belonging undoubtedly to *Syrphus* (cf. Fig. 2 with 3 and 4). Verrall‡ has given it as his opinion that "the inflated frons alone is sufficient to differentiate the genus," but after the examination of three species of "*Catabomba*" and some sixty species of *Syrphus* I am unable to concur in the opinion. The inflation of the frons is so much greater in the male that it may be looked upon as a secondary sexual character (cf. Fig. 1 of *pyrastri,* male, with Fig. 5, female). To my mind there is no more reason for constructing a separate genus on this one character than there would be in the erection of a new genus to include those species, which, like *S. geniculatus* Macquart, have a greater protrusion than usual of the lower part of the face.

3. *Reduced Hypopygium.*—Here again we are dealing with a character that has no special generic significance. It is true that in the "*Catabombas*" the hypopygium is small and almost or entirely concealed from above under the fifth abdominal segment, but it is also true that in *scleniticus* it is much larger than in *pyrastri,* while in a number of species of *Syrphus* (*grossulariæ* Meigen, *auricollis* Meigen, *protritus* O. Sacken, *creper* Snow) it is likewise much reduced and partially or entirely concealed below the fifth segment.

4. *Pilose Eyes.*—Rondani founded his genus *Lasiophthicus* with *pyrastri* as the type, on those species of *Syrphus* which have hairy eyes. The separation on this character is entirely unwarranted in the light of more recent study, as Verrall (l. c.) has pointed out. Verrall further maintains that we may have bare-eyed *Catabombas,* "as I possess four specimens of a bare-eyed species which existed

‡ Br. Flies, Syrphidæ, 334.